

**WHAT IS CLAIMED IS:**

1. A seat load measuring apparatus comprising:
  - a load sensor for detecting a load which is applied to a vehicle seat by an occupant sitting on said vehicle seat;
  - a control unit for calculating the load applied to said vehicle seat on the basis of a detection signal of said load sensor; and
  - a distortion member which is distorted due to the load applied on said vehicle seat;
  - a plurality of strain gauges for detecting the distortion of said distortion member; and
  - a sensor-side connector connected to said plurality of strain gauges and adapted to be connected to a cable to carry a signal from the sensor to the control unit.
2. The apparatus of Claim 1, wherein said sensor-side connector is configured to allow the cable to be detachably connected.
3. The apparatus of Claim 2, further comprising:
  - a base frame, upon which said load sensor is disposed, which is fixed to a vehicle floor or a lower member of said vehicle seat, wherein the base frame receives the load applied on said vehicle seat.
4. The apparatus of Claim 3, wherein said base frame includes a protector for protecting at least a part of said load sensor including said sensor-side connector.
5. The apparatus of Claim 4, wherein said protector includes an open side facing in at least one of the vertical direction, the longitudinal direction, the lateral direction, the diagonal direction from upper front to lower back or from lower front to upper back, the diagonal direction from upper left to lower right or from lower left to upper right, and the diagonal direction from forward left to backward right or from backward left to forward right in a state mounted to the vehicle, and the entry of said sensor-side connector faces the open side of said protector.

6. The apparatus of Claim 4, wherein said protector is formed by bending a band-like plate to have a protecting portion surrounding at least a part of said load sensor including said sensor-side connector, and mounting portions to be attached to said base frame.

7. The apparatus of Claim 3, further comprising:

a plurality of front-side and rear-side rail brackets which are disposed near the front and rear ends of said base frame, respectively;

a seat rail connected to said front-side and rear-side rail brackets which slides in the longitudinal direction of the vehicle; and

a plurality of arms which are disposed on a front portion and a rear portion of said base frame, respectively to extend in the longitudinal direction.

8. The apparatus of Claim 7, wherein each of said plurality of arms is provided at its one end with a press portion for transmitting force to said plurality of strain gauges and at its other end with a connecting portion relative to each of said plurality of rail brackets.

9. The apparatus of Claim 7, further comprising:

a plurality of protective mechanisms that are disposed around said plurality of front and rear rail brackets, respectively, such that when the load applied between said base frame and said plurality of rail brackets exceeds a predetermined value, said plurality of protective mechanisms directly transmit the excessive load between said base frame and said plurality of rail brackets not through said plurality of arms.

10. The apparatus of claim 9, further comprising a reinforcing member disposed on said plurality of protective mechanisms at the rear-side rail bracket for providing reinforcement against the load in a direction of lifting said base frame.

11. A seat load measuring apparatus comprising:

a load sensor for detecting a load which is applied to a vehicle seat, wherein the load sensor includes a connector configured to connect to a cable to carry a signal from the sensor to a control unit; wherein the connector is configured to allow the cable to be detachably connected so that the cable can be connected to the measuring apparatus after the apparatus is installed in the vehicle.

12. The apparatus of claim 11, further comprising a protecting member that protects the connector from damage due to lifting of a rear side of the vehicle seat.

13. The apparatus of claim 12, wherein the protecting member includes an opening for receiving an end of the cable therethrough.

14. The apparatus of claim 11, wherein the load sensor includes a distortion member configured to be distorted when load is applied to the seat.

15. The apparatus of claim 14, wherein the load sensor includes a strain gauge for detecting the amount of distortion of the distortion member.

16. A seat load measuring apparatus comprising a load sensor for detecting a load which is applied to a vehicle seat by measuring the amount of distortion of a distortion member using a strain gauge, wherein the load sensor includes a sensor-side connector configured to be detachably connected to a cable having a corresponding cable-side connector to carry a signal from the sensor to a control unit; and a protecting member that is arranged to protect the sensor from a large load resulting from lifting of a rear side of the vehicle seat.